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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/470,343	12/22/1999	Bernardo Martinez-Tovar	P-1583	6032

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EXAMINER	
CHAMBERS, TROY	

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 10/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/470,343	MARTINEZ-TOVAR ET AL.	
	Examiner	Art Unit	
	Troy Chambers	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s) _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. An Advisory Action was inadvertently mailed to the applicant on 27 August 2002 without prosecution on the merits. Hence, the Advisory Action is summarily withdrawn and a Final Office Action issued as follows:

Election/Restrictions

1. Applicant's election with traverse of Species A in Paper No. 18 is acknowledged. The traversal is on the ground(s) that the Examiner did not provide an example of a materially different process with respect to the restriction of species C and D as the method of using species A and B. This is not found persuasive but this Examiner will voluntarily withdraw the restriction between species A and B (the product) and species C and D (the method of use).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

2. Claims 1-7, 9 and 11-24 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Publication WO 9742462 issued to Martinez-Tovar ("MT"). MT discloses a semiconductor bridge device 10, comprising: a silicon or sapphire substrate 12 (pg. 11, ll. 29-30); an electrical bridge structure disposed on the substrate 12 (fig. 1), the bridge structure comprising a layer of semiconductor material; a layer consisting

essentially of titanium 18, 20 (pg. 11); the bridge structure comprising a bridge section 14c extending between pad sections 14a/b; a pair of aluminum lands 16a/b (pg. 9, ll. 13-36); a pair of electrical leads 32 a/b; and, a capacitor connected to said leads 32 a/b (pg. 24, ll. 24-29).

3. Independent claims 1, 12, 18 and 21 are rejected as anticipated by MT as described above.

4. Dependent claims 2, 3, 4, 15, 16, 17 and 20 are rejected as anticipated by MT as described above.

5. With respect to claim 5, MT discloses a substrate comprises silicon with a silicon dioxide layer (pg. 8, ll. 16-21).

6. With respect to claim 6, MT discloses a substrate comprising sapphire (pg. 8, ll. 24-27).

7. With respect to claims 7, 9 and 19, MT discloses a semiconductor bridge wherein the material having a negative coefficient of electrical conductivity comprises polycrystalline silicon (claim 18).

8. With respect to claim 15, MT discloses an igniter in contact with an energetic material charge contained within the header of an igniter assembly (fig. 3b and claim 15).

9. With respect to claims 22-24, refer to MT claim 14 and pages 23-26.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over MT in view of US Patent No. 4976200 issued to Benson et al. ("Benson"). MT discloses a semiconductor bridge as described above. But, Benson does not disclose a bridge structure comprising a layer of undoped polycrystalline silicon. However, the use of undoped silicon substrates is well known and used by those with ordinary skill in the semiconductor igniter art (see, e.g. U.S. Patent Nos. 4976200, 5309841, 5861570 and SIR H1366).

Specifically, Benson discloses a tungsten bridge for the low energy ignition of explosive and energetic materials wherein the substrate 12 and silicon bridge layer 20 are made of undoped silicon. At the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute the doped silicon layers of MT with undoped silicon as taught by Benson. The suggestion/motivation for doing so would have been to save manufacturing time and costs (Benson, col. 3, ll. 67-67 to col. 4, ll. 1-28).

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-7, 9 and 11-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 5-9, 12-20 and 36 of U.S. Patent No. 6133146 (the US equivalent to the MT disclosure). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons stated above.

14. Claims 1-24 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 5-9, 12-20 and 36 of U.S. Patent No. 6133146 in view of Benson. See above explanation of obviousness rejection.

Response to Arguments

1. Applicant's arguments filed 19 February 2002 have been fully considered but they are not persuasive. Specifically, with respect to independent claim 1, Applicant argues that the limitation "a layer consisting essentially of titanium" is intended to indicate the "substantial exclusion" of tungsten from the metal layer. However, the specification of MT clearly discloses a base layer 18 consisting essentially of titanium

(MT, pg. 11, ll. 1-2). With respect to independent claim 18, applicant argues that claim 18 contains "a similar limitation relative to the layer on the semiconductor bridge material." Again, MT discloses a base layer 18 "consisting essentially of titanium".

2. With respect to applicant's arguments of product-by process claim 12, it is a well known in patent law that in product-by-process claims the determination of patentability is based on the product itself and not its method of production. MPEP 2113. Hence, MT's semiconductor bridge having a base layer "consisting essentially of titanium" necessarily anticipates applicant's product-by-process claims.

3. With respect to applicant's process of use claims 21-24, applicant's arguments are directed to the vaporization characteristics of the tungsten/titanium layer 20 of MT. However, as stated above, MT also discloses a base layer 18 "consisting essentially of titanium". Hence, the vaporization characteristics of MT's base layer 18 would necessarily occur in the manner claimed by the applicant.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Martinez-Tovar, Bickes and Hartman are cited as of interest to show similar semiconductor bridge igniters.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-4195.